

Recurrent cranio-oculo-facial diabetic complication

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ABSTRACT

Diabetic cranial neuropathy is one of the important complications of diabetes with up to 10-fold increase in incidence. It usually affects 3rd, 4th, and 6th cranial nerves. Recurrent cranial neuropathy is lesser reported, and its incidence is not very clear. Course is usually benign with spontaneous remission within months. A 47-years diabetic male presented with acute onset diplopia and right sided ptosis with history of 3 previous episodes of sudden facio-ocular complications of diabetes over a period of 5 years all of which had improved completely over 6 to 8 weeks. On examination he was found to have right-sided pupil sparing 3rd cranial nerve palsy. Visual acuity was normal. Examination of fundus showed early nonproliferative diabetic retinopathy changes. Motor, sensory system, bladder, and bowel were normal. Blood tests revealed FBS 133 mg%, PPBS 333 mg%, HbA1C 8.8, Creatinine 1.8 mg%, normal electrolytes, and LFT. CSF study showed 4 cells with Protein 68 mg% and Sugar 83 mg%. CT scan of the brain showed normal brain parenchyma. MRI of brain did not reveal any acute infarct or mass lesion and visualized cranial nerves were normal. Other work ups were negative. His sugars were controlled with oral antidiabetic drugs. Patient improved with oral steroids.

Keywords: Cranial, diabetes, diplopia, neuropathy, steroid

Introduction

Diabetic cranial neuropathy is one of the important complications of diabetes. Diabetics usually have upto 10 fold increase in its incidence.^[1] It usually affects 3rd, 4th and 6th cranial nerves. Presentation is usually acute causing considerable morbidity. Recurrent cranial neuropathy is lesser reported and its incidence is not very clear. Course is usually benign with spontaneous remission within months.

Case Report

A 47-years diabetic and hypertensive male on oral antidiabetic drugs presented with acute onset diplopia and right-sided ptosis. He had suffered from 3 previous episodes of sudden facio-ocular complications of diabetes over a period of 5 years (first

right-sided 7th cranial nerve LMN type palsy followed by left-sided 7th cranial nerve LMN type palsy followed by right-sided 6th cranial nerve palsy in order). All his previous 3 episodes had improved completely over 6 to 8 weeks either spontaneously or on steroids.

On examination he was found to have right sided pupil sparing 3rd cranial nerve palsy manifested by ptosis and restriction of eye movements [Figures 1-4]. There was no local swelling or tenderness or fever or erythema and other cranial nerves were normal. Visual acuity was normal. Examination of fundus showed early nonproliferative diabetic retinopathy changes. Motor, sensory system, bladder, and bowel were normal. Blood pressure was 160/86 mm Hg. ECG was normal.

Blood tests revealed hemoglobin 13 gm%, FBS 133 mg%, PPBS 333 mg%, HbA1C 8.8, Creatinine 1.8 mg%, normal electrolytes, and LFT. Urine for microalbumin was 24.38 mg/dl. TSH was 2.56. CSF study showed 4 cells (50% polymorphs and 50% mononuclear cells) with Protein 68 mg% and Sugar 83 mg%. CRP was not raised.

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CT scan of the brain showed normal brain parenchyma. MRI of brain [Figures 5-8] did not reveal any acute infarct or mass lesion and visualized cranial nerves were normal. However, MRI also revealed subtle homogenous enhancement of right orbital apex, medial temporal lobe with relative bulky lateral wall of cavernous sinus whose clinicoradiologic significance was not evident. Work up for granulomatous etiology including CSF CBNAAT for

mycobacterium was negative and Serum ACE level was normal. Autoimmune and vasculitis workup including ANA, c ANCA, and P ANCA were negative.



Figure 1: Ptosis Right eye



Figure 3: Restriction of adduction Right eye



Figure 2: Restriction of elevation Right eye

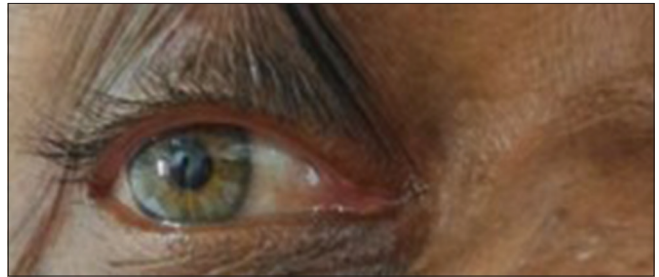


Figure 4: Pupillary sparing in Right eye

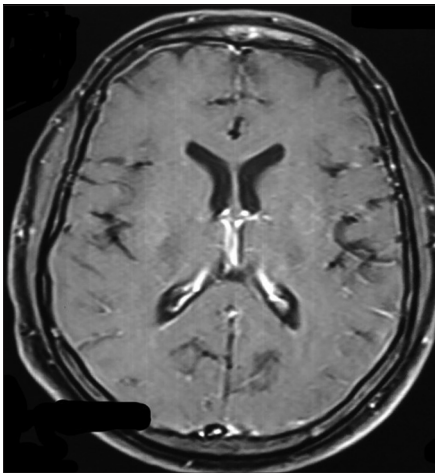


Figure 5: MRI Brain grossly normal features

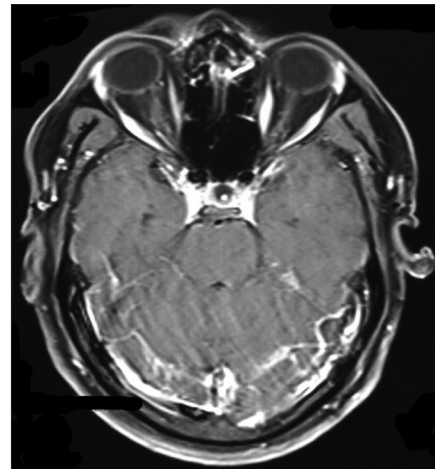


Figure 6: MRI showing orbital apex region

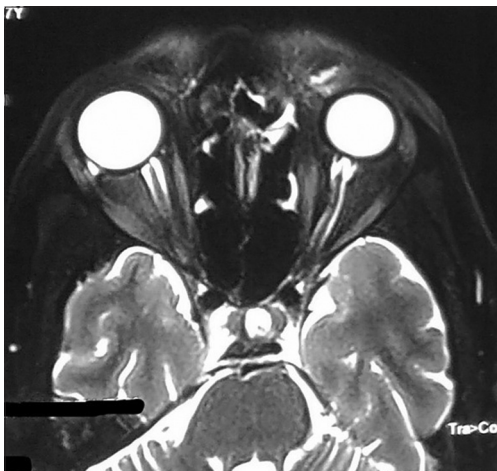


Figure 7: MRI with temporal and cavernous sinus region

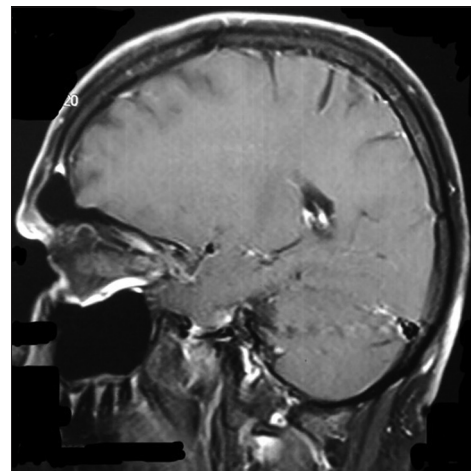


Figure 8: Sagittal MRI Brain



Figure 9: Improvement following treatment

His sugars were controlled with oral antidiabetic drugs (glimepride, metformin, and voglibose), and blood pressure control was done. Patient was given a trial of oral steroids with tapering regimen. Over next 8 to 10 weeks patient showed significant improvement of his condition [Figures 9 and 10]. He is planned for repeat MRI brain and orbits to follow up for the changes in previous MRI.

Discussion

First reported by Ogle in 1866, diabetic cranial neuropathy is an important neurological complication of diabetes. Isolated third nerve palsy has been found to occur most commonly followed by seventh and sixth cranial nerve in order.^[2] Multiple cranial neuropathies is rare with incidence ranging from 0.4 to 0.97%.^[3] Recurrent cranial nerve palsy in diabetics is lesser reported and can be distressing due to its effect on daily activities. Pupil sparing feature is usually found in diabetic oculomotor nerve lesion since ischemia spares the superficially located pupillary fibers. While evaluating such patients with cranial nerve palsies, common differentials like aneurysm, trauma, cerebrovascular disease, or infections should be excluded. Course of diabetic cranial neuropathy is usually benign with spontaneous remission. Strict control of diabetes should be achieved, and regular ocular check up should be done.

Conclusion

Diabetes can repeatedly cause cranial neuropathies and thus affect the eyes and face causing significant morbidity. Course is usually benign with spontaneous remission.



Figure 10: Eye closure following recovery

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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